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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/825,128	04/03/2001	Raymond Grant Rowe	RD-27,905/USA	1704

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GENERAL ELECTRIC COMPANY
GLOBAL RESEARCH CENTER
PATENT DOCKET RM. 4A59
PO BOX 8, BLDG. K-1 ROSS
NISKAYUNA, NY 12309

EXAMINER

IP, SIKYIN

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 12/06/2002

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

Applicant(s)

Examiner

Group Art Unit

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 9/20/02.
- ☒ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-9, 11-25 is/are pending in the application.
- Of the above claim(s) 1-8 is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 9, 11-25 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 - ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
 - ☐ received in Application No. (Series Code/Serial Number) _____
 - ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

DETAILED ACTION

Election/Restriction

1. Applicant's election with traverse of Group III, claims 9-25, in Paper No. 3, received March 12, 2002 is acknowledged. The traversal is on the ground(s) that there is no serious burden to the examiner to search additional inventions. This is not found persuasive because as set forth in Paper No. 2, that the claimed inventions are classified in different classes and subclasses. The search for one Group of inventions is not required for other Groups. Furthermore, a die may be formed by different processing steps as are evident by the references of record. Thus, serious burden to examiner has been shown by different classifications.

The requirement is still deemed proper and is therefore made FINAL.

2. This application contains claims 1-8 are drawn to an invention nonelected with traverse in Paper No. 2. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 103

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 9, 11-15 and 21-25 are rejected under 35 U.S.C. § 103 as being unpatentable over USP 4702299 to Gravemann in view of USP 4820356 to Blackburn et al.

6. Gravemann disclose(s) the features including the claimed application of Ni superalloy for wear-proof inserts (col. 5, lines 7-17). The difference between the reference(s) and the claims are as follows: Gravemann does not disclose the heat treatment of the Ni superalloy. However, Blackburn (col. 2, line 30- col. 4, line 65, examples, and Tables I-IV) disclose(s) heat treatment of Ni superalloys for improving crack property at high temperature in the same field of endeavor or the analogous metallurgical art. The high temperature crack is also a problem for mold/die materials. Therefore, it would have been obvious to one having ordinary skill in the art of the cited references at the time the invention was made to heat treat Ni

superalloy insert of Gravemann as taught by Blackburn in order to improve crack property. In re Venner, 120 USPQ 193 (CCPA 1958), In re LaVerne, et al., 108 USPQ 335, and In re Aller, et al., 105 USPQ 233.

7. Claims 16-20 are rejected under 35 U.S.C. § 103 as being unpatentable over USP 4820356 to Blackburn et al.

8. Blackburn (col. 2, line 30- col. 4, line 65, examples, and Tables I-IV) disclose(s) heat treatment of Ni superalloys for improving crack property at high temperature in the same field of endeavor or the analogous metallurgical art. Therefore, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the subject matter disclosed by the reference. Overlapping ranges have been held to be a prima facie case of obviousness. See Titanium Metals Corporation of America, 227 USPQ 773 (Fed. Cir. 1985) and In re Petering, 301 F.2d 676, 133 USPQ 275 (CCPA 1962).

9. Using inert gas during heat treatment is conventional and it is contemplated within ambit of ordinary skill artisan to protect heating material from oxidized.

Response to Arguments

10. Applicant's arguments filed September 20, 2002 have been fully considered but they are not persuasive.

11. Applicants argue that Gravemann fails to address crack problem casting mold.

Applicants' attention is directed to col. 6, lines 4-7. Furthermore, per request of applicants, USP 4250076 to Golden et al (col. 1, line 61 to col. 2, lines 2) and USP 3948311 to Sylvester (col. 1, lines 20-38) are cited to show high temperature crack is a well known problem for mold/die materials.

12. Applicants argue that Blackburn do not teach a method of treating a die insert. But Blackburn (col. 1, lines 10-18) teach to heat treat Ni based superalloy which is the material for mold insert as taught by Gravemann (col. 5, lines 7-25).

13. Applicants argue in page 8, third full paragraph, that there is no motivation to combine cited references because mold does not subject to same repeated stresses as turbine disk. First, Gravemann and Blackburn are directed to same Ni based superalloy. Second, as is evinced by USP 3948311 to Sylvester (col. 1, lines 20-38), that "The major cause of mold rejection is metal thermal fatigue caused by high temperature gradients between the inside and outside of the mold. With repeated casts, these thermal gradients cause high tensile stresses to develop in the ingot mold when it cools and they increase to the extent that cracks develop on the inside face." Therefore, cited references are directed to solve the same problem.

14. Applicants argue that none of cited references teach heat treat in inert gas atmosphere. Heat treatment in inert gas atmosphere is so well known in the art of cited references which is contemplated by ambit of ordinary skill artisans (see the attached Metals Handbook, published in 1948).

15. Applicants argue that the alloys of Tillman have triplex size distribution and

Gravemann and Blackburn fail to disclose the gamma-prime particles size distribution. Tillman discloses triplex size distribution because Tillman does not want gamma-prime particles size distribution uniform as Gravemann and Blackburn.

16. Applicants argue that Blackburn fails to disclose mold insert. But, instant claims 16-20 do not require mold insert.

17. Applicants' argument in paragraph bridging pages 10 and 11 of the instant remarks is noted. But applicants do not point out how are the claimed steps different from Blackburn that claimed uniform gamma-prime particles size distribution would not be inherently possessed by Gravemann and Blackburn.

Conclusion

18. The prior art made of record is considered pertinent to applicant's disclosure. Per request of applicants that USP 4250076 to Golden et al (col. 1, line 61 to col. 2, lines 2) and USP 3948311 to Sylvester (col. 1, lines 20-38) are cited to show high temperature crack is a known problem for mold/die materials. Metal Handbook 1948 edition (page 294) is cited to show protective atmosphere is known in heat treatment art to reduce metal oxidation during heating.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The above rejection relies on the reference(s) for all the teachings expressed in the

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text(s) of the references and/or one of ordinary skill in the metallurgical art would have reasonably understood or implied from the text(s) of the reference(s). To emphasize certain aspect(s) of the prior art, only specific portion(s) of the text(s) have been pointed out. Each reference as a whole should be reviewed in responding to the rejection, since other sections of the same reference and/or various combination of the cited references may be relied on in future rejection(s) in view of amendment(s).

All recited limitations in the instant claims have been met by the rejections as set forth above.

Applicant is reminded that when amendment and/or revision is required, applicant should therefore specifically point out the support for any amendments made to the disclosure. See MPEP § 2163.06 (a) and 37 C.F.R. § 1.119.


Examiner Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Ip whose telephone number is (703) 308-2542. The examiner can normally be reached on Monday to Friday from 5:30 A.M. to 2:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King, can be reached on (703)-308-1146.

The facsimile phone number for this Art Unit 1742 are (703) 305-3601 (Official Paper only) and (703) 305-7719 (Unofficial Paper only). When filing a FAX in Technology Center 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are not for entry into the file of the application. This will expedite processing of your papers.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0651.



SIKYIN IP
PRIMARY EXAMINER
ART UNIT 1742

S. Ip
December 2, 2002